

1. A computer system for conducting purchase transactions using wireless communication between a consumer and a merchant, comprising:

- a consumer operated mobile device;
- a merchant operated device;
- a trusted secure transaction server (STS) device;
- one or more payment service devices;
- a wireless communication network in communication with the consumer device and the merchant device;
- a communication network in communication with the merchant device and the STS device;
- a communication network in communication with the STS device and the payment service devices,

wherein the consumer device, merchant device and secure transaction server device are capable of executing the Secure Transaction Protocol.

2. The computer system as in claim 1, wherein the wireless network is a local wireless network and consumer device is in proximity to the merchant device.

3. The computer system as in claim 2, wherein the consumer device allows the consumer to input identification information into consumer device.

4. The computer system as in claim 3 wherein the consumer device is mobile device, coupled to a wireless network and comprising:

- a wireless network interface connecting to the wireless network,
- a processor executing a web browser application, purchasing application executing the Secure Transaction Protocol and a submit receipt application

5. The computer system as in claim 2 where in the merchant device is coupled to a wireless network for communication with a consumer and a wired or wireless network for communication to the STS and comprising:

- a wireless network interface connecting to the wireless network for the consumer,
- a wired or wireless network interface connecting to the wireless network for the STS,

a processor executing a merchant retail application program and a purchasing application program executing the Secure Transaction Protocol (STP).

6. The computer system as in claim 4, wherein the mobile consumer device is packaged as a portable device, comprising:

- a lightweight processor with storage capable of executing the Secure Transaction Protocol (STP) and a web browser application;

- a wireless network interface and connection to a wireless network, and capable of connecting to a merchant device;

- a battery;

- a display for communicating output to a user and for other interaction with its user; and means for user to input information, including navigation buttons or touch screen.

7. The computer system as in claim 6, wherein the mobile consumer device is packaged as a credit card-sized device (approximately 55mm x 85 mm) and approximately 10mm thick or thinner.

8. The computer system as in claim 7, wherein wherein the wireless network interface of the mobile consumer device can be any of, WiFi, Bluetooth, UWB, IR, Zigbee, or other local wireless network interface, or a cellular telephone network.

9. The computer system as in claim 8, wherein the wireless network that the mobile consumer device is capable of connecting to, includes a cellular telephone network and the consumer device includes proximity binding such as a barcode display, a barcode an RF-ID tag or location determination.

10. The computer system as in claim 9, wherein the consumer device is capable of binding to a physical goods purchase or token presentation using a device such as a barcode display, a barcode an RF-ID tag or location determination.

11. The computer system as in claim 10, wherein the mobile consumer device includes means for indicating readiness to authorize payment such as a "Pay" button or a

touch screen "Pay" button.

12. The computer system as in claim 6, wherein the mobile consumer device comprising no display, and comprising means for communicating output including synthesized speech.

13. The computer system as in claim 6, wherein the mobile consumer device comprising no buttons or touch screen and including a microphone and capable of processing input by speech recognition.

14. The computer system as in claim 6, wherein the mobile consumer device further comprising a biometric sensor for user identification such as fingerprint or face recognition.

15. The computer system as in claim 6, wherein the mobile consumer device interfaces to a display located remotely from the consumer device, on the merchant device.

16. The computer system as in claim 6, wherein the mobile consumer device is a Personal Digital Assistant (PDA) or a mobile phone.

17. The computer system as in claim 5, wherein wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including WiFi and an access point operated by the merchant device and the merchant device providing a directory service on the wireless network.

18. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including IR and an access point operated by the merchant device.

19. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including UWB and an access point operated by the merchant device.

20. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including Zigbee and an access point operated by the merchant device.

21. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including WiFi and one or more access points operated by another party as a hotspot application.

22. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including Bluetooth and one or more access points operated by another party as a hotspot application.

23. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including IR and one or more access points operated by another party as a hotspot application.

24. The computer system as in claim 5, wherein the wireless network interface comprising a local wireless interface including UWB and one or more access points operated by another party as a hotspot application.

25. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface including Zigbee and one or more access points operated by another party as a hotspot application.

26. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising a local wireless interface as a point-to-point connection based on IR.

27. The computer system as in claim 5, wherein the wireless network interface of the mobile consumer device comprising cellular phone interface and proximity binding of the consumer.

28. The computer system of any one of claims 17, 18, 19, 20, 21, 22, 23, 24, 25, 26,

and 27, wherein the merchant device interfacing to a consumer device through the wireless network and executing a physical goods purchase and binding a consumer device to the physical goods purchase.

29. The computer system as in claim 28 further comprising partitioning in which the merchant retail application program and the universal pervasive transaction framework application program are executed in separate partitions of the merchant device.

30. The computer system as in claim 29, further comprising a secure network connection to a secure transaction server.

31. The computer system as in claim 30, wherein the secure network connection to the secure transaction server is the Internet.

32. The computer system as in claim 31, wherein the secure network connection to the secure transaction server is wireless.

33. The computer system as in any one of claims 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27 wherein the local wireless network comprises multiple access points operated by the merchant.

34. The computer system as in any one of claims 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27 wherein the local wireless network comprises multiple access points operated by another party but granting access to merchants and consumers.

35. The computer system of claim 1 in which the secure transaction server is operated in a secure physical environment so that the integrity of the consumer and merchant accounts is protected.

36. The computer system of claim 35 further comprising a multiple server system to handle geographic and temporal differences in demand, and preserving the behavior and security properties of the Secure Transaction Protocol.